

Element III—Infrastructure, Hardware, Technical Support, and Software

H. Infrastructure Needs, Technical Specifications, and Design—Section 11 (See also Appendix D)

Regional Fiber Optic Network

In 1997 a 165 mile fiber optic "highway" was installed throughout Calhoun and Branch Counties linking fifteen high schools including Pennfield High School, a K-8 school district, two intermediate school districts, two career centers, and four higher education institutions including Albion College, Kellogg Community College, Olivet College, and Western Michigan University. The fiber is currently being used to receive Student Services and Internet access at all Pennfield Schools locations.

Pennfield Network Configuration

Pennfield Schools passed a \$27,915,000 bond June 14, 2004. The bond includes erecting, furnishing and equipping a new high school, including and auditorium; acquiring and installing education technology; developing and improving athletic/practice fields and site improvements. During the construction process most of the servers were moved to the new high school.

There is a campus local area network that includes Pennfield High School, Pennfield Middle School, Dunlap Elementary, and the Pennfield Transportation building. It consists of 900 category five or six cable drops throughout the buildings with a minimum of three cable drops in each room. There are four labs in the high school including an Instructional Computer lab, an Open Lab, a Business lab, Art/Journalism lab and Applied Technology Lab. There are two Instructional Computer labs in the Middle School and one at Dunlap Elementary. The media centers in the high school and middle school have computer areas and use Follett as the circulation system.

The cabling is strung in divided wire mold raceway with electrical power on the other half of the raceway throughout the District with the exception of the high school. A twelve strand fiber backbone connects the three buildings. Pennfield High School has a gigabit Ethernet Backbone connecting its four network closets. A MDF resides in Pennfield High School that includes servers, patch panels, the district firewall, routers, and switches. There is a combination of 10/100/1000 Ethernet speeds throughout the system.

All District buildings include wireless technology which allows connectivity.

Purdy and North Pennfield Elementary Network Project

There are over 500 category five cable connections, dedicated electrical wiring, a new fire alarm system, exit lighting, TVSS units, and network electronics at Purdy and North Pennfield. A minimum of eight network connections are in each classroom. Each building has two network cabinets with two file servers, patch panels, and supporting electronics. In 2008/2009 Pennfield Schools connect Purdy and North to the main campus using fiber.

Hardware Inventory

	DUNLA					
	PU	NP	P	MS	HS	Total
CPU	39	22	87	175	139	462
Laptop	21	32	105	212	825	1503
Printer	24	20	40	66	59	209
Projector	15	12	52	54	37	170
Camera	4	7	18	13	41	83
TV	10	15	23	31	14	103
Sound Systems	12	12	0	1	29	54
Tablets	1	1	5	7	44	58
Phones	7	6	13	59	72	157
Servers					15	15
Switches	9	4	9	18	32	72
Surveillance						
Cameras	3	5	9	27	68	112
Storage Devices	1	1			2	4
Wireless Access						
Points	10	10	20	20	48	108

Other items

Transportation: phones, computers, wireless, switches

Wireless Controllers – 3

Miscellaneous cabling throughout the District

Miscellaneous software (Microsoft, PowerSchool, Curriculum Related Software, etc...)

E-mail System

Google mail is used as the district employee and student email choice. All district employees and students must sign an Acceptable Use Policy before they are issued a network and e-mail account. E-mail is accessible through the Internet accessing the Google website. Utilizing Google mail gives Pennfield access to Google Docs where storage of documents, spreadsheets, presentations etc., are accessible with Internet access. The system is monitored by the Network Administrator.

Messages are run through a gateway at Google for viruses and spam filtering.

Internet Filtering System

A m86 Internet filtering appliance with a m86 subscription is the Districts Internet Filtering solution. The system is monitored by the Network Administrator and has conformed to the Children's Internet Protection Act (CIPA). m86 subscription is set to automatically update site categories daily. Additional sites are blocked as needed.

Telephone System

The District presently runs a Voice Over Internet Protocol (VOIP) telephone system installed the summer of 2007. There are presently over 50 phones connected to this system. It allows the District control over the features and rights assigned to users including call forwarding and voice mail. This system includes hardware (phones, servers, switches, etc...) software, installation and maintenance. The District has installed fiber cables from the high school to Purdy and North Penn Elementary which will allow more flexibility with the VOIP phone system. A three-year leasing and service contract was signed with Climax Telephone Systems (CTS) in January 2007 to support a centrex telephone system. These phones are used for fax machines, emergency and elevator lines, and other non VOIP phones. The District will continue to support two T-1 lines supplied by CTS as we transfer to the fiber.

Universal Service Funds are applied for yearly on the eligible segments of centrex system. An average 44% discount rate has been approved on local and long distance phone service through this program.

Payroll/Human Resources/Finance

Cyborg is the current Payroll/Human Resource system. SMART is used for Finance.

Student Services

Pennfield Schools will be moving to a new Student Information System (SIS) in the 2012-2013 school year. The new SIS will be PowerSchool which is a Pearson product. PowerSchool features includes student, parent and teacher access, mobile apps for the iPad and smartphones, reports, student record and transcript exchange, assessments and analysis, scheduler, State reporting and much more.

Standardized Software and Resources

- Nothing less than Windows XP Service Pack 2
- Nothing less than Microsoft Office Pro 2000
- Open Office 3.0
- Microsoft Server OS 2000 - 2008
- VMware 4.0 ESX
- Veeam Backup & Replication version 6.0
- Follett
- Internet Explorer version 7
- Mozilla Firefox version 3
- Fonts4Teachers
- PowerSchool
- PowerSource
- Inspiration
- Kidspiration
- COMODO AntiVirus
- m86 Security
- Career Scope
- My Dream Explorer (web based)
- Discovery Video Streaming (web based)
- Information Technology Training Initiative
- Adobe Photoshop Elements and Premiere Elements
- Reading A to Z (web based)
- Study Island (web based)
- Type to Learn
- Moodle
- Kid Pics

- Graph Club
- Mac OS X Server 10.6 (Snow Leopard)
- Mac OS X 10.6 (Snow Leopard)
- Final Cut Studio 2.0
- Adobe Creative Suite 3 Design Premium
- Adobe Illustrator CS3
- Adobe InDesign CS3
- Adobe Photoshop CS3
- Adobe Dreamweaver CS3
- Adobe Flash CS3
- Audacity
- Garage Band
- iCal
- iChat
- iDVD
- iMovie HD
- iPhoto
- iWeb
- KompoZer
- Photo Booth
- NeoOffice
- Quicktime
- Quicktime Broadcaster
- Safari
- Lanschool
- Data Director
- Photostory 3
- Google Earth
- Adobe Acrobat
- Adobe Acrobat Reader
- Premiere Assistive Technology Suite
- Free Mind
- Photo Filtre
- Picassa
- GimpShop
- Chrome

Technical Support

Pennfield Schools provides sufficient funds to maintain technical assistance from the following sources:

- A full time District Technology Director
- A full time Instructional Technology Coordinator
- One forty hour Technology Support person
- One part time Technology Support person
- A full time Network Administrator
- Outside technical service vendors

A web based Helpdesk is used by all Pennfield Staff when the assistance of the Technology Department is needed. The system is e-mail driven and allows the Technology Director to assign problems to appropriate technology staff. The end user is kept updated through e-mail on the status of their submitted problem/request and all communications between technology staff as they work on the problem/request. The program builds a knowledge base that can be searched and used as a reference tool. It also generates reports that tell such things as time on task, categories serviced, building requests, and staff productivity.

I. Increase Access—Section 12

Future Technology Infrastructure

District

- Additional mobile labs in all buildings
- Phones or phone access for all necessary staff
- Voice mail for all necessary staff
- PowerSchool Public Portal to all buildings
- Handhelds or wireless technology for all students and staff
- Online classes for credit or credit recovery
- Technology Curriculum aligned with State and integrated in all curriculums
- Additional assistive technology in all buildings

- Video Conferencing capabilities in all buildings
- Video over IP
- Online Assessment
- Online courses or online supplemental resources using Moodle or other products.
- All Teachers having a website or web presence.
- Students using social networking appropriately
- Students using technology appropriately and understanding the consequences of inappropriate use such as cyberbullying.
- Support technology integration into the curriculum in the following areas:
 - Core Subject Areas: English, reading or language arts, world languages, arts, mathematics, economics, science, geography, history, government and civic
 - Student Learning and Innovation Skills
 - Student Information, Media and Technology Skills
 - Student Life and Career Skills